II. The Rejection of Claims 2, 5, 6, 8 - 10 and 15 - 26 Under 35 U.S.C. §103(a)

The rejection of Claims 2, 5, 6, 8 - 10 and 15 - 26 as unpatentable over Molero and Epps, in view of U.S. Patent No. 6,324,580 to Jindal and further in view of U.S. Patent No. 5,721,904 to Ito is respectfully traversed.

Claim 2

Initially, it is respectfully submitted that Molero, Epps, Jindal and Ito cannot be combined as asserted by the Office in its rejection. The incompatibility of Molero and Epps and the reasons they cannot be combined was discussed above in connection with Claim 1, and these reasons are equally applicable as to Claim 2. Jindal and Ito also are directed to completely different systems and are concerned with totally different problems, and also cannot be combined either with each other or with Molero or Epps, as asserted.

Jindal does not relate to load balancing among "mirrored target storage systems" as asserted by the Office. Rather, Jindal relates to load balancing requests for a replicated service or application among a plurality of servers running instances of the replicated service or application. A "replicated service", as that term is used by Jindal, relates to an application such as web browsing or electronic mail *(see column 4, lines 49-51)*; and a "request for a replicated service" is not a storage request, but rather is merely a query by a client seeking access to an available server running the desired service application. Load balancing requests in Jundal involve choosing the least-loaded server, such as one that has the fastest response time, from among the servers providing the desired service application *(column 6, lines 37-40)*.

Selecting a least-loaded server for accessing a service application such as web browsing or e-mail as taught by Jindal does not teach or suggest load balancing of storage requests in a storage network by selecting, using one or more processing units associated with a switch port, a path having the shortest average response time,

as claimed. Molero, Epps and Jindal are concerned with completely different types of systems, having completely different problems. There is nothing in these references to suggest their combination to meet the claims.

Ito relates to a heterogeneous distributed database access system comprising a plurality of gateways and servers in which SQL requests from a client information processing system are converted into an appropriate DBMS language by a selected gateway information processing system. Selection is made by broadcasting a plurality of pings, measuring the response times from servers, and selecting a server having the shortest average response time. This has nothing to do with selecting a server of a replicated service application, as taught by Jindal, or with respect to load balancing requests in a storage network, where the path from an initiator to a target having the shortest average response time is selected, as claimed in Claim 2.

Accordingly, it is submitted that there is no teaching or suggestion to combine the four references to Molero, Epps, Jindal and Ito, as asserted, and that the combination of these references cannot render Claim 2 unpatentable.

Claims 8 - 10

Independent Claims 8 and 9 recite, among other limitations:

> the switch including a plurality of ports and a plurality of processing units, wherein each processing unit is associated with at least one port of said plurality of ports to provide load balancing at said at least one port.

For the reasons discussed above with respect to Claim 1, Molero and Epps fail to disclose or suggest a storage switch including a plurality of processing units that are each associated with at least one port of a plurality of ports to provide load balancing as said at least one port, as set forth in independent Claims 8 and 9, and nothing in the references discloses or suggests that they can be combined such that a processing unit associated with at least one of a plurality of ports provides load balancing at that port, as claimed

Independent claims 8 and 9 further recite, similar to Claim 2, that a storage request is passed along a routing path with the shortest average response time using one or more of the processing units associated with the ports. As pointed above in connection with Claim 2, Jindal relates to load balancing for a replicated service or application among a plurality of servers running operating instances of the desired service or application. Ito relates to a data base access system where selection of a server component is made by broadcasting pings to measure response time from various servers, and selecting a server component having the shortest average response time. There is nothing in either Ito or Jindal that discloses or suggests load balancing by passing storage requests along paths with the shortest average response time using processing units associated with one or more ports, as set forth in Claims 8 and 9. Accordingly, taken alone or in combination there is nothing in the teachings of Molero, Epps, Jindal or Ito that would teach or suggest the recitations of Claims 8 and 9. Accordingly, it is respectfully submitted that these claims are allowable over the cited prior art.

Claim 10 depends from Claim 9, and is patentable over the cited references for at least the same reasons Claim 9 is patentable.

Claims 15 - 26

Independent Claim 15 recites:

> a plurality of processing units, wherein each processing unit is associated with one or more ports of said plurality of ports and determines, for storage level input/output requests received at said one or more ports, a respective average response time for each of a plurality of storage input/output paths between the switch and the target.

Independent Claim 17 recites:

> a plurality of processing units, wherein each processing unit is associated with one or more ports of said plurality of ports to provide load balancing at said one or more ports.

Independent Claim 19 recites:

> a switch including a plurality of ports and a plurality of processing units, wherein each processing unit is associated with at least one port to provide load balancing at said at least one port.

Independent Claim 23 recites:

> said switch including a plurality of ports and a plurality of processing units, wherein each processing unit is associated with at least one port of said plurality of ports to provide load balancing at said at least one port.

Each of independent Claims 15, 17, 19 and 23 recites similar limitations to those discussed above in connection with independent Claims 1, 8 and 9. Accordingly, it is respectfully submitted that Claims 15, 17, 19 and 23 are allowable over the cited prior art for at least the same reasons that Claims 1, 8 and 9 are allowable.

Furthermore, Claims 16, 18, 20-22 and 24-26 which depend from one of independent Claims 15, 17, 19 and 23 incorporate the same limitations as their corresponding independent claim, and are allowable over the prior art for at least the same reasons that their corresponding independent claims are allowable.

III. The Rejection of Claim 11 Under 35 U.S.C. §103(a)

The rejection of Claim 11 as unpatentable over Molero, Jindal and Ito is traversed.

Independent Claim 11 sets forth a method for use in a storage network including a switch, and recites:

> the switch including a plurality of ports each port having affiliated processing circuitry . . .

passing the first request received by the switch from the first initiator to the physical storage device along a path to the physical storage device with the shortest average response time using said affiliated processing circuitry; and

passing the second request received by the switch from the second initiator to the member of the mirrored target along a path to the member with the shortest average response time using said affiliated processing circuitry. (*Emphasis added*)

Claim 11 requires that each port of the switch have "affiliated processing circuitry", and requires passing of first and second requests received by the switch from first and second initiators along paths with the shortest average response times "using said affiliating processing circuitry". Neither Molero, Jindal or Ito, alone or in combination, disclose or suggest a method for use in a storage network that includes a switch having a plurality of ports, each having affiliated processing circuitry, where requests received by the switch are passed along a path having the shortest average response time using said affiliated processing circuitry, as claimed. These recitations are similar to those found in the other independent claims and discussed above.

Accordingly, Claim 11 is deemed to be patentable over the cited prior art for the same reasons discussed above in connection with the other independent claims.

IV. The rejection of Claims 12 – 14 under 35 U.S.C. §103(a)

Claims 12-14, which depend from Claim 11, incorporate the same limitations as Claim 11 and are deemed to be allowable for at least the same reasons.

Moreover, these claims recite that the steps of "passing" of requests, as well as determining the average response time for each path is performed by a linecard. The only one of the references that discloses linecards is Epps. However, for the reasons discussed above in connection with Claim 1, the linecard CPUs of Epps do not perform load balancing, and Epps cannot be combined with Molero. There is no teaching or suggestion of the claimed invention in the combination of the Molero, Epps and the other references to Jindal and Ito.

Accordingly, it is respectfully submitted these Claims 12 – 14 are likewise allowable.

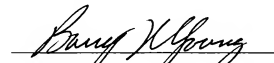
V. Conclusion

In view of the foregoing, it is respectfully submitted that the prior art of record neither discloses nor suggests the invention set forth in Claims 1-6 and 8-26, and that these claims are deemed to be allowable over this prior art. Accordingly, favorable reconsideration of this application and early allowance of all claims is respectfully requested.

The specification has been amended to update the status of the applications referred to on page 1.

Dated: June 13, 2006

Respectfully Submitted,



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